

PENNSYLVANIA

LEGEND

County boundary

Capital

City

Crushed stone/sand and gravel districts

MINERAL SYMBOLS (Major producing areas)

Be	Beryllium plant	Gyp-s	Synthetic gypsum	S-o	Sulfur (oil)
Cem	Cement plant	Hg	Mercury plant	SG	Construction sand and gravel
Clay	Common clay	IS	Industrial sand	Steel	Steel plant
CS	Crushed stone	Lime	Lime plant	TiMet	Titanium metal plant
D-G	Dimension granite	Mica	Mica	Vm	Vermiculite
D-Sd	Dimension sandstone	Nb	Columbium (niobium) plant	Zn	Zinc plant
D-Si	Dimension slate	Nb/Ta	Columbium (niobium) and tantalum plant		Concentration of mineral operations
FePig	Iron oxide pigments	Peat	Peat		

Source: Pennsylvania Bureau of Topographic and Geologic Survey/U.S. Geological Survey (2002)

MINERAL SYMBOLS

	County boundary	Be	Gyp-s	Synthetic gypsum	S-o	Sulfur (oil)
★	Capital	<u>Cem</u>	Hg	Mercury plant	SG	Construction sand and gravel
●	City	Clay	IS	Industrial sand	<u>Steel</u>	Steel plant
		CS	<u>Lime</u>	Lime plant	<u>TiMet</u>	Titanium metal plant
	Crushed stone/sand and gravel districts	D-G	Mica	Mica	Vm	Vermiculite
		D-Sd	<u>Nb</u>	Columbium (niobium) plant	<u>Zn</u>	Zinc plant
		D-Sl	<u>Nb/Ta</u>	Columbium (niobium) and tantalum plant		Concentration of mineral operations
		FePg	Peat	Peat		

Source: Pennsylvania Bureau of Topographic and Geologic Survey/U.S. Geological Survey (2002)

THE MINERAL INDUSTRY OF PENNSYLVANIA

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Pennsylvania Bureau of Topographic and Geologic Survey for collecting information on all nonfuel minerals.

In 2002, the estimated value¹ of nonfuel mineral production for Pennsylvania was \$1.27 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 1.5% decrease from that of 2001.² In each of the 2 previous years, the State's mineral production increased in value by 2.5% in 2000 from that of 1999 and by more than 3% in 2001 from 2000. Pennsylvania rose to 9th from 10th in the Nation in total nonfuel raw mineral production value. Pennsylvania accounted for more than 3% of the U.S. total. (The actual totals for 2000-02 are higher than those shown in table 1; industrial sand and gravel and tripoli data have been withheld in order to protect company proprietary data.)

In 2002, Pennsylvania continued to be among the Nation's leading States in the production of crushed stone, cement (portland and masonry), and lime (descending order of value), by value the state's leading nonfuel minerals. These mineral commodities accounted for about 89% of the State's total nonfuel raw mineral production value. Construction sand and gravel followed, accounting for most of the remaining 11% (table 1). In 2001, increases in the production and value of crushed stone, up \$44 million, construction sand and gravel, up \$18 million, accounted for nearly all of the increase in the State's nonfuel minerals economy. Smaller increases occurred in common clays and peat. The largest decreases were those of lime, down about \$7 million, and cement (masonry and portland), down a combined \$6.2 million (estimated). Industrial sand and gravel, dimension stone, and tripoli values were down slightly (table 1).

Based upon USGS estimates of the quantities produced in the 50 States in 2002, Pennsylvania remained third in portland cement, fourth of 4 States that produce tripoli, and sixth in lime and masonry cement. While the State rose to 10th from 13th in common clays, it dropped to 3d from 2d in the production of crushed stone and to 11th from 8th in dimension stone. Additionally, significant quantities of construction sand and gravel and industrial sand and gravel were produced in the State.

Pennsylvania is exclusively an industrial-mineral- and coal-producing State; metals that were produced in the State in 2002 were processed from materials acquired from foreign and other domestic sources. Pennsylvania ranked fifth in the Nation (fourth in 2001) in the production of raw steel, with an output of 5.78 million metric tons of raw steel (American Iron and Steel Institute, 2002, p. 76).

Reference Cited

American Iron and Steel Institute, 2002, Annual report 2002: Washington, DC, American Iron and Steel Institute, 130 p.

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2002 USGS mineral production data published in this chapter are preliminary estimates as of July 2003 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2001 may differ from the Minerals Yearbook, Area Reports: Domestic 2001, Volume II, owing to the revision of preliminary 2001 to final 2001 data. Data for 2002 are preliminary and are expected to change; related rankings may also change.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN PENNSYLVANIA^{1,2}

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	2000		2001		2002 ^P	
	Quantity	Value	Quantity	Value	Quantity	Value
Cement:						
Masonry	324	33,700 ^e	329	38,500 ^e	340 ^e	40,000 ^e
Portland	6,640	475,000 ^e	6,540	464,000 ^e	6,060 ^e	430,000 ^e
Clays, common	840	1,870	758	2,320	1,020	4,420
Gemstones	NA	1	NA	1	NA	1
Lime	1,350	93,900	1,280	86,500	1,250	79,800
Peat	6	183	9	206	11	200
Sand and gravel:						
Construction	17,900	110,000	20,200	128,000	19,500	126,000
Industrial	W	(3)	W	(3)	W	(3)
Stone:						
Crushed	97,900	520,000	101,000	564,000	100,000	580,000
Dimension metric tons	49,500	12,100	50,400	11,600	56,200	12,700
Tripoli	W	(3)	W	(3)	W	(3)
Total	XX	1,250,000	XX	1,290,000	XX	1,270,000

^eEstimated. ^PPreliminary. NA Not available. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

²Data are rounded to no more than three significant digits; may not add to totals shown.

³Value withheld to avoid disclosing company proprietary data.

TABLE 2
PENNSYLVANIA: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	2000				2001			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone ²	119	60,300	\$319,000	\$5.30	111	57,900	\$329,000	\$5.69
Dolomite	12	11,800	63,800	5.39	12	14,100	76,800	5.44
Marble	1 ^r	W	W	7.40 ^r	1	W	W	6.63
Granite	8	4,700	24,300	5.17	7	4,630	26,100	5.62
Traprock	10	4,630	23,400	5.06	9	5,220	27,400	5.26
Sandstone and quartzite	45 ^r	9,330 ^r	50,500 ^r	5.41 ^r	45	11,300	62,000	5.48
Slate	1	W	W	4.79	1	W	W	4.91
Miscellaneous stone	14	6,680 ^r	36,600 ^r	5.48 ^r	15	6,860	38,500	5.62
Total or average	XX	97,900	520,000	5.32	XX	101,000	564,000	5.60

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

¹Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

²Includes "limestone-dolomite" reported with no distinction between the two.

TABLE 3
PENNSYLVANIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Macadam	599	\$3,410	\$5.69
Riprap and jetty stone	728	5,490	7.54
Filter stone	213	1,340	6.30
Other coarse aggregates	1,020	6,760	6.66
Total or average	2,560	17,000	6.66
Coarse aggregate, graded:			
Concrete aggregate, coarse	2,500	14,900	5.99
Bituminous aggregate, coarse	6,140	37,300	6.08
Bituminous surface-treatment aggregate	1,810	12,100	6.66
Other graded coarse aggregates	2,970	17,400	5.87
Total or average	14,300	86,100	6.04
Fine aggregate (-3/8 inch):			
Stone sand, concrete	148	680	4.59
Stone sand, bituminous mix or seal	2,090	12,800	6.15
Screening, undesignated	1,000	6,400	6.38
Other fine aggregates	2,100	12,600	5.98
Total or average	5,340	32,500	6.09
Coarse and fine aggregates:			
Graded road base or subbase	5,760	29,700	5.16
Unpaved road surfacing	1,330	8,530	6.42
Terrazzo and exposed aggregate	W	W	5.80
Crusher run or fill or waste	1,330	5,780	4.33
Other coarse and fine aggregates	7,360	37,500	5.10
Total or average	15,800	81,600	5.17
Other construction materials	765	3,260	4.26
Agricultural:			
Agricultural limestone	701	8,330	11.89
Poultry grit and mineral food	(2)	(2)	3.53
Chemical and metallurgical:			
Cement manufacture	4,720	22,200	4.71
Lime manufacture	1,640	6,180	3.77
Flux stone	135	842	6.24
Sulfur oxide removal	268	3,470	12.96
Special:			
Mine dusting or acid water treatment	(2)	(2)	15.68
Asphalt fillers or extenders	(2)	(2)	5.64
Whiting or whiting substitute	117	1,450	12.40
Other fillers or extenders	315	3,420	10.86
Other miscellaneous uses and specified uses not listed	594	4,960	8.35
Unspecified: ³			
Reported	40,800	232,000	5.68
Estimated	12,000	59,000	4.74
Total or average	53,200	290,000	5.46
Grand total or average	101,000	564,000	5.60

W Withheld to avoid disclosing company proprietary data; included with "Other."

¹Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

²Withheld to avoid disclosing company proprietary data; included in "Grand total."

³Reported and estimated production without a breakdown by end use.

TABLE 4
PENNSYLVANIA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Construction:						
Coarse aggregate (+1 1/2 inch) ²	--	--	340	1,850	599	4,090
Coarse aggregate, graded ³	--	--	1,130	5,140	3,660	23,500
Fine aggregate (-3/8 inch) ⁴	--	--	498	2,160	1,020	6,230
Coarse and fine aggregates ⁵	--	--	W	W	W	W
Other construction materials	--	--	58	321	89	363
Agricultural ⁶	--	--	W	W	W	W
Chemical and metallurgical ⁷	1,490	5,350	217	2,860	1,270	5,940
Special ⁸	--	--	W	W	W	W
Other miscellaneous uses and specified uses not listed	--	--	4	30	382	2,740
Unspecified: ⁹						
Reported	2,000	10,900	4,930	27,000	8,390	47,400
Estimated	1,900	8,800	1,700	8,000	1,700	7,500
Total	5,390	25,100	10,200	53,600	20,200	118,000
	District 4					
	Quantity	Value				
Construction:						
Coarse aggregate (+1 1/2 inch) ²	1,620	11,100				
Coarse aggregate, graded ³	9,470	57,400				
Fine aggregate (-3/8 inch) ⁴	3,830	24,100				
Coarse and fine aggregates ⁵	11,500	58,100				
Other construction materials	617	2,580				
Agricultural ⁶	666	7,440				
Chemical and metallurgical ⁷	3,780	18,600				
Special ⁸	647	5,100				
Other miscellaneous uses and specified uses not listed	207	2,190				
Unspecified: ⁹						
Reported	25,500	146,000				
Estimated	7,100	34,000				
Total	64,900	367,000				

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes filter stone, macadam, riprap and jetty stone, and other coarse aggregates.

³Includes bituminous aggregate (coarse), bituminous surface-treatment aggregate, concrete aggregate (coarse), railroad ballast, and other graded coarse aggregates.

⁴Includes screening (undesignated), stone sand bituminous mix or seal, stone sand (concrete), and other fine aggregates.

⁵Includes crusher run (select material or fill), graded road base or subbase, terrazzo and exposed aggregate, unpaved road surfacing, and other fine aggregates.

⁶Includes agricultural limestone and poultry and mineral food.

⁷Includes cement manufacture, flux stone, lime manufacture, and sulfur oxide removal.

⁸Includes asphalt fillers or extenders, mine dusting or acid water treatment, whiting or whiting substitute, and other fillers or extenders.

⁹Reported and estimated production without a breakdown by end use.

TABLE 5
PENNSYLVANIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand)	3,110	\$21,400	\$6.87
Plaster and guniting sands	26	225	8.65
Concrete products (blocks, bricks, pipe, decorative, etc.)	44	332	7.55
Asphalt concrete aggregates and other bituminous mixtures	1,500	8,520	5.69
Road base and coverings ²	1,540	8,310	5.39
Fill	2,850	14,600	5.14
Snow and ice control	166	957	5.77
Other miscellaneous uses ³	425	2,600	6.13
Unspecified: ⁴			
Reported	7,080	50,400	7.12
Estimated	3,400	20,000	5.89
Total or average	20,200	128,000	6.33

¹Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

²Includes road and other stabilization (cement and lime).

³Includes railroad ballast.

⁴Reported and estimated production without a breakdown by end use.

TABLE 6
PENNSYLVANIA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY USE AND DISTRICT¹

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		District 3	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregates and concrete products ²	W	W	1,070	7,130	W	W
Asphaltic concrete aggregates and other bituminous mixtures	507	2,410	672	4,120	W	W
Road base and coverings ³	803	4,000	352	1,920	W	W
Fill	255	1,190	52	264	46	223
Snow and ice control	W	W	45	365	W	W
Other miscellaneous uses ⁴	745	3,890	103	497	1,270	7,280
Unspecified: ⁵						
Reported	2,140	18,700	532	3,210	3,200	20,900
Estimated	910	5,300	400	2,500	2,100	12,000
Total	5,360	35,500	3,230	20,000	6,590	44,600
	District 4		Unspecified districts			
	Quantity	Value	Quantity	Value		
Concrete aggregates and concrete products ²	1,020	8,940				
Asphaltic concrete aggregates and other bituminous mixtures	W	W	--	--		
Road base and coverings ³	W	W	--	--		
Fill	2,380	12,800	--	--		
Snow and ice control	6	45	118	130		
Other miscellaneous uses ⁴	203	1,720	--	--		
Unspecified: ⁵			--	--		
Reported	1,210	7,590	--	--		
Estimated	47	280	--	--		
Total	4,870	31,400	118	130		

W Withheld to avoid disclosing company proprietary data; included with "Other miscellaneous uses." -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes plaster and gunite sands.

³Includes road and other stabilization (cement and lime).

⁴Includes railroad ballast.

⁵Reported and estimated production without a breakdown by end use.